BEFORE THE DEPARTMENT
OF NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

* * * * * * * * * *

IN THE MATTER OF THE APPLICATION)
FOR BENEFICIAL WATER USE PERMIT) FINAL ORDER
NO. 49230-s76M BY GRANT HANSON)

* * * * * * * * * *

The time period for filing exceptions to the Hearing Examiner's Proposal for Decision in the above-entitled matter has expired. No exceptions or other arguments were filed by any party of record. The Department of Natural Resources and Conservation (hereafter, "Department") accepts and adopts the Findings of Fact and Conclusions of Law of the Hearing Examiner as contained in the Proposal, and expressly incorporates them herein by reference.

The Department hereby takes notice of the erratum contained in the first line of Permit Condition F. of the Proposed Order, and hereby expressly changes the word "by" to "from"; the correct wording being "If a written complaint is received <u>from</u> a prior appropriator....".

Therefore, on the basis of the record and the proceedings herein, the Department makes the following:

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FINAL ORDER

Subject to the terms, restrictions, and limitations specified below, Application for Beneficial Water Use Permit No. 49230-s76M is hereby granted to Grant Hanson to appropriate 5 cubic feet per second up to 3,619 acre-feet annually for non-consumptive use for power generation between January 1 and December 31 of each year. The point of diversion of this appropriation is NE¼SE¼SW¼ of Section 10, Township 14 North, Range 19 West, and the place of use is the SE¼SE¼SW¼ of Section 10, Township 14 North, Range 19 West, all in Missoula County, Montana. The source of supply is surface water from Grant Creek, to be diverted by means of an SCS-approved inlet structure and to be returned to the creek in the area of the point of use specified above. The priority date for this Permit shall be December 13, 1982, at 2:40 p.m.

This Permit is issued subject to the following express terms, conditions, restrictions, and limitations:

A. The water rights evidenced by this Permit are subject to all prior and existing rights, and to any final determination of such rights as provided by Montana law. Nothing herein shall be construed to authorize diversions by the Permittee to the detriment of any senior appropriator.

B. Nothing herein shall be construed to affect or reduce the Permittee's liability for damages which may be caused by the exercise of this Permit. Nor does the Department, in issuing this Permit, acknowledge any liability for damages caused by the exercise of this Permit, even if such damage is a necessary and unavoidable consequence of the same.

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The Permittee shall not divert more water than is reasonably required for the purpose for which the Application has been made. In no instance may the Permittee appropriate more water than the amount specified in the Permit. At all times when the water is not reasonably required for the specified purpose, the Permittee shall allow the waters to remain in the source of supply.

D. The structures, necessary appurtenances, and all construction necessary to accomplish the installation and maintenance of the power generation facility shall be in accordance with Soil Conservation Service plans and specifications, or plans and specifications prepared by a qualified professional engineer and approved by the SCS and any other necessary authorizing agency.

E. The Permittee shall work with the Soil Conservation Service to develop an accurate method of measurement at or above the point of diversion and at or below the point of return flow to the creek, and shall keep a record of all flows diverted and all flows returned to the creek. The Permittee shall cooperate with other licensing agencies in determining methods and records of measurement which will ensure that the Permittee's compliance with by-pass flow or other requirements imposed by such agencies can be accurately determined.

F. If a written complaint is received from a prior appropriator alleging that diversions by the Permittee from Grant Creek are exacerbating winter freeze-up problems to the extent that prior water rights cannot reasonably be exercised, the

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Department may make a field investigation of the project. If the field investigation yields sufficient evidence to indicate that the prior appropriator would be able to exercise the water right in the absence of appropriation by the Permittee, the Department may conduct a hearing in the matter, allowing the Permittee opportunity to show cause why the Permit should not be modified or revoked.

NOTICE

The Department's Final Order may be appealed in accordance with the Montana Administrative Procedures Act by filing a petition in the appropriate court within thirty (30) days after service of the Final Order.

DONE this 2 day of January, 1985.

Gary Fritz

Gary Fritz, Administrator
Department of Natural
Resources and Conservation
32 S. Ewing, Helena, MT
(406) 444 - 6605

Peggy A. Elting

Peggy A. Elting, Hearing Examiner
Department of Natural Resources
and Conservation
32 S. Ewing, Helena, MT 59620
(406) 444 - 6612

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AFFIDAVIT OF SERVICE

STATE OF MONTANA)
) ss.
County of Lewis & Clark)

Donna K. Elser, an employee of the Montana Department of Natural Resources and Conservation, being duly sworn on oath, deposes and says that on January 3, 1985, she deposited in the United States mail, certified mail, an order by the Department on the Application by Grant Hanson, Application No. 49230-s76M, for an Application for Beneficial Water Use Permit, addressed to each of the following persons or agencies:

1. Grant Hanson
N. 7655 Hwy 10 W
Missoula, MT 59801

2. Vernon R. White
c/o Randle V. White
108 Pattee Creek Drive
Missoula, MT 59801

3. Richard H. Ostergren
P.O. Box 8012
Missoula, MT 59807

4. A. Reed Marbut
8815 Pickering Lane
Missoula, MT 59802

5. GCR Trust
c/o Alexander George
510 Glacier Building
Missoula, MT 59802

6. Grant Creek Ranch Trust
c/o Alexander George
510 Glacier Building
Missoula, MT 59802

7. Barbara M. Karmel
P.O. Box 1548
Lake Oswego, Oregon 97034

8. Mike McLane, Manager
Water Rights Bureau Field Office
Missoula, MT
(inter-departmental mail)

9. Peggy A. Elting
Hearing Examiner
(hand deliver)

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

by Donna Elser

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STATE OF MONTANA)
) ss.
County of Lewis & Clark)

On this 3rd day of January, 1985, before me, a Notary Public in and for said state, personally appeared Donna Elser, known to me to be the Hearings Recorder of the Department that executed this instrument or the persons who executed the instrument on behalf of said Department, and acknowledged to me that such Department executed the same.

IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

Judy Kohn

Notary Public for the State of Montana
Residing at Montana City, Montana
My Commission expires 3-1-85

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1. Even though creek is over-appropriated, a non-consumptive use may be allowed. pp 25-26
2. must take possibility of winter freeze-up into account

BEFORE THE DEPARTMENT
OF NATURAL RESOURCES AND CONSERVATION
OF THE STATE OF MONTANA

* * * * * * * * * * *

IN THE MATTER OF THE APPLICATION)
FOR BENEFICIAL WATER USE PERMIT) PROPOSAL FOR DECISION
NO. 49230-s76M BY GRANT HANSON)

* * * * * * * * * * *

Pursuant to the Montana Water Use Act and to the contested case provisions of the Montana Administrative Procedures Act, a hearing in the above-entitled matter was held on February 10, 1984 in Missoula, Montana.

Grant Hanson, the Applicant in this matter, appeared personally.

Objector A. Reed Marbut appeared personally and also in his capacity as trustee for GCR Trust and Grant Creek Ranch Trust, which entities are also Objectors in this matter.

Objector Vernon R. White appeared personally, and by and through his son Randle V. White.

Objector Richard Ostergren appeared personally.

Objector Barbara M. Karmel submitted written testimony in the form of an affidavit.

Lawrence Stookey, consulting engineer, appeared as a witness for the Applicant.

J.R. Reynolds, a resident of Grant Creek, appeared as a witness for the Objectors.

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David Pengelly, Field Manager of the Missoula Water Rights Bureau Field Office, appeared as staff expert for the Department of Natural Resources and Conservation (hereafter, the "Department").

STATEMENT OF THE CASE

On December 13, 1982, the Applicant filed an Application for Beneficial Water Use Permit, seeking to appropriate 5 cubic feet per second ("cfs") up to 3,619 acre-feet per year from Grant Creek for non-consumptive use for power generation at a point in the SE¼SE¼SW¼ of Section 10, Township 14 North, Range 19 West, Missoula County, Montana. The water is to be diverted by means of a penstock (pipeline) located in the NE¼SE¼SW¼ of Section 10, Township 14 North, Range 19 West, Missoula County, Montana, from January 1 through December 31, inclusive, of each year. The water will be conveyed by means of a 15" pipeline for approximately 700' along the north bank of Grant Creek, run through a generating facility and then returned to the Creek.

The pertinent portions of the Application were published in the Missoula Missoulian, a newspaper of general circulation in the area of the source, on January 19 and 26, 1983, and February 2, 1983.

Timely objections were filed to Application No. 49230-s76M on Grant Creek by Barbara M. Karmel, Richard H. Ostergren, Grant Creek Ranch Trust, A. Reed Marbut, GCR Trust, and Vernon R. White and Randle V. White. The Montana Department of Fish, Wildlife, and Parks submitted a "letter of concern" for inclusion in the record.

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Mr. Ostergren objected to the Application on the basis that water would be lost to the Creek, and therefore to him, through evaporation and seepage caused by the proposed project. Mr. White objected on the basis that Grant Creek is an over-decreed stream and there are no unappropriated waters, and that the proposed appropriation would disturb the streambed, surface flow rate, and the fish population of Grant Creek. The remainder of the objectors alleged that, according to a comparison of the decreed rights and the available water commissioner records, there are no unappropriated waters in the source of supply. In addition, these objectors alleged that the proposed use would be consumptive because the diversion facility will "violate the integrity of both the stream bed and its riparian habitat" and thereby will cause loss of surface flow and create consumption, and that evaporative consumption would also occur. Additional factors specified by the objectors were problems with winter ice buildup, and problems involved in policing an over-appropriated stream.

A January 9, 1984 Field Investigation and Report was prepared by David Pengelly for inclusion in the Department's contested case file in this matter, and was sent to all parties of record. On January 16, 1984, Mr. Pengelly sent a notice of erratum in the original report, and on February 3, 1984, the Objectors were sent copies of a feasibility report on the proposed project prepared by Dr. Lawrence Stookey, and copies of flow data worksheets prepared by Dennis Workman of the Montana Department of Fish, Wildlife, and Parks.

A. Reed Marbut submitted a memorandum dated January 20, 1984, referencing his original objection and attached statement, David Pengelly's January 9, 1984 Memorandum, and the data contained in relevant Statements of Claim for Existing Water Rights for Marbut, GCR Trust, and Grant Creek Ranch Trust.

EXHIBITS

The Applicant, Grant Hanson, submitted three exhibits in support of his Application in the above-entitled matter in addition to the January, 1984 report by Lawrence L. Stookey, entitled "A Report on the Potential Effects of the Use of the Waters of Grant Creek for Hydroelectric Generation", previously submitted to all parties.

Applicant's Exhibit 1 is a photocopy of an engineer's schematic drawing of a typical intake structure.

Applicant's Exhibit 2 is a diagram of the recommended inlet structure, supplied to the Applicant by a Soil Conservation Service engineer.

Applicant's Exhibit 3 is a photocopy of an Ossberger turbine assembly of the type the Applicant intends to use, with an accompanying explanation of the relevant operating principles and range of application.

Applicant's Exhibits 1-3 were accepted into the record without objection.

The Objectors submitted four exhibits in support of their objections to the Application in this matter.

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Objectors' Exhibit 1 is a photocopy of an article entitled "Water Shortages Predicted for Some Parts of Montana", taken from page 12 of the February 9, 1984, edition of the Missoulian newspaper.

Objectors' Exhibit 2 is a graph of Grant Creek discharge based on an abstract of the Pengelly report.

Objectors' Exhibit 3 is a photocopy of the March 17, 1979 Findings of Fact, Conclusions of Law, and Order in In the Matter of Application for Beneficial Water Use Permit No. 12,868-s76M by Donald I. and Jan D. Nyquist.

Objectors' Exhibit 4 is a photocopy of a letter to Reed Marbut from E. Lee Magone, General Manager of Mountain Water Company, discussing surface water freezing problems experienced in Rattlesnake Creek.

Objectors' Exhibits 1-4 were accepted into the record without objection.

The Objectors additionally moved that the Department's contested case hearing file in this matter be included in the record, and it was accepted into the record without objection.

The Field Report and Memorandum prepared by Dave Pengelly, Field Manager of the Missoula Water Rights Bureau Area Office, dated January 9, 1984, was submitted to all parties and to the Department for inclusion in the contested case file in this matter prior to the hearing.

The record in this matter was left open for submission of additional information by all parties, with reference to the Hearing Examiner's request of additional discussion of the

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feasibility of Applicant's proposed bypass flow to comply with an Applicant-Soil Conservation Service agreement, and of the potential problem of winter freeze-up in Grant Creek.

Additional documents submitted by the Applicant for inclusion in the record in this matter are:

1. A letter to the Hearing Examiner dated February 19, 1984, from Roger V. White, a hydraulic engineer, addressing the issues of winter freeze-up and flow control at the inlet with regard to Applicant's proposed project.

2. A letter to the Hearing Examiner dated February 22, 1984, from Dennis Workman, Fisheries Manager with the Montana Department of Fish, Wildlife, and Parks, addressing the issue of winter freeze-up and potential impact of a freeze-up on the fishery.

3. A letter to the Hearing Examiner dated February 23, 1984, from John P. Arnott, design engineer for Arnott Irrigation, addressing the issues of winter freeze-up and of the availability of flow-measuring devices.

4. A February 24, 1984 addendum to the letter sent by Dennis Workman, addressing the question of freeze-up with specific regard to the Applicant's project site.

5. Applicant's submissions, received by the Department on February 27, 1984, of a photocopy letter to Grant Hanson from the Missoula County Conservation District granting an extension of a 310 permit, and answers to the questions of winter freeze-up concerns and monitoring of appropriated water and instream flow amounts.

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6. A letter to the Hearing Examiner dated February 24, 1984, from Lawrence Stookey, addressing the issues of flow measurement, winter freezeover, and soil types at the site of the proposed project.

7. A letter to the Hearing Examiner dated March 12, 1983, from F. Dean Mahrt, Vice President of Piper, Jaffray, and Hopwood, addressing the question of Applicant's financial capability to complete the proposed project.

8. A letter to the Hearing Examiner dated March 13, 1984, from Tom Coston, Regional Forester for the U.S.D.A. Forest Service Northern Region, disclaiming any connection between the Forest Service and Robert V. White's personal opinion on the Applicant's project in his private capacity.

9. A letter to the Hearing Examiner dated March 13, 1984, from Jerry A. Olson, Certified Public Accountant, addressing the financial feasibility of the proposed project.

10. A letter to the Hearing Examiner dated March 17, 1984, from the Applicant, enclosing a clipping from page 11 of the March 17, 1984 Missoulian entitled "Study says fisheries vulnerable to small hydro projects".

11. Response to post-hearing materials submitted by the Objectors, prepared and submitted by the Applicant. Received by the Department on March 19, 1984.

Additional documents submitted by the Objectors for inclusion in the record in this matter are:

1. "Additional Factual Evidence" submitted by A. Reed Marbut, received by the Department February 24, 1984; included are a series of three photographs of an SCS-approved headgate structure on Grant Creek, a photocopy of an article from the March 1, 1983 issue of the Willamette Week newspaper entitled "Small-Scale Hydromania", and a discussion of potential impacts and costs of the proposed project with reference to the article and photographs.

2. "Objectors' Brief in Support of Findings of Fact, Conclusions of Law, and Order" submitted by A. Reed Marbut, received by the Department on February 24, 1984. This brief reviews the hearing in this matter, a summary of the Application and Objections, arguments on factual and legal issues, and Objectors' suggestions as to the proposed Findings of Fact, Conclusions of Law, and Order to be issued.

3. "Objectors' Reply Brief" submitted by A. Reed Marbut, received by the Department on March 14, 1984, responding to the Applicant's post-hearing submissions and restating Objectors' position regarding the Application.

The Hearing Examiner, having reviewed the record in this matter and being fully advised in the premises, does hereby make the following proposed Findings of Fact, Conclusions of Law, and Order.

FINDINGS OF FACT

1. The Department has jurisdiction over the subject matter herein and the parties hereto, whether they appeared at the hearing or not.

2. The Applications in this matter were duly filed with the Department of Natural Resources and Conservation on December 13, 1982 at 2:40 p.m.

3. The Applicant has a bona fide intent to appropriate water pursuant to a fixed and definite plan, and is not attempting to speculate in the water resource.

4. The Applicant intends to use the water for power generation, which is a beneficial use. M.C.A. § 85-2-102(2).

5. The source of supply for the proposed appropriation is Grant Creek, a tributary of the Clark Fork River.

6. Lawrence Stookey stated in his January, 1984 report: "The geology underlying Grant Creek in this area can best be described as unconsolidated material. It may be thought of in terms of a sand filter.... Such a filter contains in ascending order, gravel, pea gravel, torpedo (large diameter) sand, and fine sand." ("A Report on the Potential Effect of the Use of the Waters of Grant Creek for Hydroelectric Generation", hereafter referred to as the "Stookey Report", p. 4).

7. Testimony and evidence in a previous Department contested case water right hearing indicated that the soils of the Grant Creek basin are prone to surface water loss. Mr. Reed Marbut, a party in the present matter, testified at the previous hearing that water delivery loss is between 60% and 90% on his portion of Grant Creek. In the Matter of Application for Beneficial Water Use Permit No. 12,868-s76M by Donald I. and Jan D. Nyquist, Findings of Fact, Conclusions of Law, and Order, March 17, 1979, Pages 8-9.)

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8. David Pengelly, in his January 9, 1984 Field Investigation and Report, referenced an unpublished study of Grant Creek which states that the Creek is a losing stream, below a gaging station located approximately half a mile downstream from the proposed project site, during the non-peak flow season. "In other words, surface flows diminish as water recharges the alluvial aquifer below this site." (Pengelly Report, referencing P. Dubreil, Investigation of Stream Flow Variation in Grant Creek, Missoula County, Montana, 1983. (Unpublished B.A. Thesis, University of Montana, Dept. of Geology)). No determination was made as to whether Grant Creek is a gaining or losing stream during peak runoff. (Pengelly Report, pp. 2, 5).

9. In his January, 1984 report and in his testimony at the hearing in the present matter, Lawrence Stookey stated that Dubreil's measurement of Grant Creek in the area of the proposed project site indicates Grant Creek is a gaining stream at that point; that water is seeping into the stream rather than out of it. Dr. Stookey testified that a comparison of the flow data collected by Dennis Workman of the Montana Department of Fish, Wildlife, and Parks with the Dubreil flow data collected further downstream indicates that Grant Creek is a gaining stream in the area of the proposed project site.

Dr. Stookey also testified that breaking the streambed "seal" during construction of the proposed facilities would not have an important impact on water loss, since soil-sealing techniques can be used so that the creek will not lose water through the

streambed, but that soil sealing techniques might not be needed or desirable if the creek is gaining water in the area. (Testimony by Lawrence Stookey; Stookey Report, p. 5).

10. Water availability information in this matter was provided by testimony of the parties, by District Court Water Commissioner records, and by David Pengelly's January 9, 1984, report which also incorporated flow information from unpublished reports and flow records from similar, gaged streams.

The District Court Water Commissioner records on Grant Creek span the years from 1918 to 1947, although three years are missing. (From 1947 through the present time, no water commissioner has been needed because the water rights users have been self-policing and have gotten along through cooperation and sharing, according to testimony by Reed Marbut). These reports show bi-monthly flow measurements for May through August of each year, although no measurements appear in many instances; testimony indicates that a water commissioner was not hired during periods when the flow in Grant Creek was sufficient to meet demand or, alternatively, when the water was so low that only the first one or two priority water use rights could be met. (Testimony of Reed Marbut, Richard Ostergren, David Pengelly, Lawrence Stookey). Water Commissioner reports do not cover the winter months.

Flow measurements of Grant Creek were taken by Paul Dubreil on nine different occasions during the period from September 23, 1981 to June 26, 1982. Measurements were gaged at seven points along Grant Creek, although not all stations were measured on

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each date. (Dubreil, supra at Finding of Fact 8, as cited in David Pengelly's January 9, 1984 report pp. 2-5). Dubreil's measurements were taken during the 1982 water year; precipitation during this year was 24% higher than average.

In addition, estimates of flows in Grant Creek have been made; in 1980 by Larry L. Brown, a hydrologist for the Department at that time, and by David Pengelly, Field Manager of the Missoula Water Rights Bureau Area Office. (See Staff Memoranda by Larry L. Brown In the Matter of the Application for Beneficial Water Use Permit No. 21958-s76M by Ronald C. and Ladeen Dionne, and David Pengelly's January 9, 1984 report, pp. 5-6). Brown estimated average monthly flows in Grant Creek. Pengelly extrapolated flow data from Rattlesnake Creek, a drainage adjacent to Grant Creek on the east; both Rattlesnake and Grant Creek basins have their headwaters in the same mountains and are similar in topography and land classification types. (Pengelly report, pp. 5, 7-9).

11. Flows in Grant Creek range from a high flow period in May and June through low flow in January and February, from a high estimated monthly flow of 172 cfs for June by Larry L. Brown (1980; actual measurements hit a high of 134 cfs in May, according to Dubreil) to a low of 5.1 cfs estimated flow for January (actual measured low is a 6.6 cfs measurement in February by Dubreil).

Additionally, testimony and evidence indicates that the stream flow fluctuates widely by season, usage, and area of the drainage. (Testimony of Grant Hanson, Reed Marbut, Richard

Ostergren, J.R. Reynolds, Randle White). Grant Creek apparently is subject to water availability conditions ranging from floods in the spring to droughts in the fall.

12. Grant Creek waters are used for stockwatering and limited domestic and other uses year around, and for irrigation as well as stock-watering and domestic uses during the summer. David Pengelly used the filed Statements of Claim of Existing Water Rights and the Provisional Permits issued to users of Grant Creek to estimate the demands on Grant Creek water. (See Pengelly report, p. 9, Table 7). Water use claims on record total 86.33 cfs for irrigation, 50.59 cfs for stockwatering, 10.38 cfs for industrial use, 3.63 cfs for domestic uses, 21.74 cfs for fire protection, and 0.25 cfs for fish and wildlife. These figures, combined with testimony at the hearing in this matter and with Findings of Fact made by the Department in a previous contested case water rights hearing on Grant Creek, indicate that there are unappropriated waters during spring runoff of each year and occasionally at other times; during the irrigation season and the winter the average flow of Grant Creek is exceeded by the demands upon it. (Objectors' Exhibit 3, In the Application for Beneficial Water Use Permit No. 12,868-s76M by Donald I. and Jan D. Nyquist, p. 9; testimony of Reed Marbut, Richard Ostergren, Randle White, Barbara Karmel; Statements of Claim for Existing Water Rights filed by the parties in the matter).

13. The beneficial use applied for in this matter is non-consumptive. The Applicant and his witness, Lawrence Stookey, testified that water would not be lost through

evaporation due to heat generation, since the proposed 35 foot fall from point of diversion to the turbine generates less than .05°F. The Applicant stated that there may be some minimal evaporation at the turbine, but that since the diversion is entirely enclosed, evaporation from the turbine would not exceed the amount of evaporation which would occur naturally in the open stream over the same distance.

Apart from any losses which may occur from evaporation, all water which is diverted into the penstock will be conveyed for 700 feet enclosed in the pipe, and will be returned to Grant Creek after running through the turbine (power generation) facility, which is to be set three feet above high water mark. (Testimony of Grant Hanson).

14. Applicant testified that he intends to use an Ossberger cross-flow turbine which is designed for low head application. This type of turbine can operate at 55% to 65% efficiency over a wide range of flow rates; with less than maximum flow, power generation decreases, but not disproportionately. Applicant testified that the proposed pipeline, as designed, will consist of a 15" pipe laid below the freezing line in a trench which is to follow an old logging road or trail paralleling the streambanks, but approximately 20 feet back from the stream. The pipe material most probably would be PVC to provide more flexibility, less friction loss, and less disruption of the site than steel pipe. The pipeline would be laid after high water to minimize impacts to the stream.

15. The Objectors testified that they were concerned that installation of the pipeline and of the diversion and power generation structures will damage the streambed, that the rocks and boulders which occur in the area will make it unfeasible to lay the line and therefore the project will remain unfinished and consequently environmentally disruptive, and that alternatively, if the line can be laid, the pipeline could intercept water "migrating" to the stream and divert it to the subsurface aquifer. (Testimony of Reed Marbut, J.R. Reynolds; written statement of Barbara Karmel, p. 2; written Objection Addendum by Randle V. and Vernon R. White).

16. Water diverted through the pipeline would be returned to the Creek at a normal velocity; it would not come directly off the turbine into the creek. Most of the force is absorbed by the turbine. Additionally, the outlet tube from the bottom of the turbine is of a greater diameter than is the pipeline, so that there is a "sprayed-down nozzle effect" which can be directed at a boulder to further reduce the water velocity. (Testimony of Grant Hanson). Water coming off the turbine alternatively could be directed at a concrete splashpad which could be extended to serve as a flume for water measurement purposes. (Testimony of Lawrence Stookey).

17. Consulting engineer Lawrence Stookey, submitting post-hearing information for the record, stated, "The water table is shallow, and the porosity of the alluvium itself is good. Drainage, on the other hand, is very dependent on slope, and has

an extreme range.... Groundwater is naturally found at a greater depth, between 30 and 60 feet below the surface, depending upon elevation and slope." (Letter dated February 24, 1984.)

18. The Objectors stated that it appears the Applicant would have to dam the creek in order to divert water into the inlet structure and that consequently it would be more difficult for low flows to pass the Applicant's point of diversion. (Testimony of Randle White, Reed Marbut).

19. The Applicant testified that no damming or impoundment probably would be necessary; that the creek channel in the Soil Conservation Service-approved diversion site area is only 5-12 feet wide, and that rocks could be placed below the water surface if it proves necessary to augment the water level at the inlet point. The inlet structure itself would be set back at a 90° angle from, and slightly lower than, the streambed, and would be screened and wide enough to minimize turbulence so that fish would not be pulled into the inlet.

20. The Objectors, in a February 24, 1984 post-hearing submission of additional information, quoted the Missoula Office of the Soil Conservation Service (hereafter, "SCS") as stating that they will require that the Hanson diversion structure conform to "standard headgate criteria" such as throat size sufficient to control Grant Creek flow volume for 50-year flood level, stream bed stabilization and plating, adjustable fish passage, and wing wall height and length to secure bank erosion and anchor structure against flood. Three photographs showing an SCS-approved headgate structure located on Grant Creek in the area of the Objectors' points of diversion are included.

Also included in the February 24 submission is a photocopy of a newspaper article entitled "Small-Scale Hydromania" (Willamette Week, March 1, 1983), which lists potential problems with dams which are built for small hydroelectric projects, and with the cumulative environmental effects of such dams.

21. The Applicant, in his March 19, 1984 "Response to Post-Hearing Material Submitted by the Objectors", states that the SCS feels he will not need a diversion structure as "elaborate" as that suggested by Mr. Marbut in the Objectors' February 24, 1984 submission, and that in any case the headgate will not be higher than "12 inches or what DFWP mandates."

22. Another concern voiced by the Objectors is that icing and freezeup problems may develop in the Creek during periods of cold temperatures if the water is slowed down at the proposed point of diversion or the flow is divided between the proposed pipeline and the flow left in the creek. (Testimony of Reed Marbut and Randle White; Objectors' February 24, 1984 Brief, p. 5; Objectors' March 14, 1984 Reply Brief, pp. 1-2). Reed Marbut stated in the March 14, 1984 Reply Brief that he dealt with surface ice layers in excess of 12" when he attempted to keep the low winter flow of water open and available for his livestock during the record cold weather in December, 1983, and that any further reduction in flow would have made this task impossible. (Brief, p. 2).

To supplement their testimony on the potential for winter freezeup in Grant Creek, the Objectors submitted Objectors' Exhibit 4, a letter on the subject written by E. Lee Magone,

General Manager of the Mountain Water Company, to Mr. Reed Marbut, stating that in the late 1960's and in the early part of the 1970's the company had been compelled to utilize mechanical equipment to clear ice jams out of the lower reaches of Rattlesnake Creek because the water had frozen to the extent that there was virtually no inflow to the facility. Mr. Magone added, in conclusion, "This problem has been infrequent for us because Rattlesnake Creek is a fairly large stream, and the prolonged cold weather that precipitates this condition is unusual. Watersheds with smaller stream flows and lower velocities would be in greater danger of freezing dry than is Rattlesnake Creek".

23. The Applicant testified that he has walked the creek bottom in the winter, wearing hip boots, and that there is not bottom icing in the area of his proposed diversion; that the velocity of the water, and the presence of rocks in the creek which increase the turbulence of the flow, appear to mitigate any bottom-freezing tendencies which the creek may exhibit lower in the drainage where creek flow is slower and is dispersed over a wider channel bottom.

The Applicant has made the additional argument that the data available on Grant Creek indicates that the Creek is a gaining stream in the upper reaches where Applicants proposed project would be located, and that "icing is much less likely to occur in a gaining stream where warm ground water is constantly flowing

into the stream than in a losing stream where water is seeping away". (Post-hearing submission by Applicant, received February 27, 1984, p. 2).

24. A February 22, 1984 letter submitted to the Hearings Examiner by Dennis Workman, Fisheries Manager for the Montana Department of Fish, Wildlife, and Parks, stated,

> "Winter is a critical time of year to the welfare of fish, especially in small streams such as Grant Creek. Dewatering can add stress to the population at this time of year. For example, in December, 1979, Rattlesnake Creek had been dewatered for city water and was flowing at a very low flow, of unknown quantity. A short, severe cold period (subzero) occurred at that time which resulted in the creek freezing solid to the bottom, and, as nearly as I could tell, killing all fish in the stream from the intake dam to the Clark Fork River.
>
> This could happen on Grant Creek if Mr. Hanson were using his water allotment at a time when severly cold temperatures were occurring. Spring water which enters the creek in the area of this project might help prevent the creek from freezing solid but I don't know exactly what effect it would have under severly cold conditions.

Mr. Workman submitted a clarification of his statements on February 22:

> In my reference to potential freezing on Grant Creek, I was only referring to the 700 feet of creek which would be affected by Mr. Hanson's project. I did not intend to infer, nor do I believe, that there would be increased threat of freezing on any other section of the creek as a result of Mr. Hanson's project. Downstream from the point at which he returns water to the stream it will remain unchanged from its present condition.

25. Roger V. White visited the proposed project site at the request of the Applicant and submitted a letter to the Hearing Examiner, in his private capacity as a hydraulic engineer, stating in part, "During the lifetime of a small-hydro project (50 years possibly) it is expected that a 'dry' year will infrequently occur and cause stream freeze-up... Any system will freeze-up if flow is not adequate, but in this instance the priority water is in the stream, the secondary water goes to the hydro."

Mr. White states that it is his understanding that the Applicant intends to design the intake structure to ensure that the instream flow requested by the Montana Department of Fish, Wildlife, and Parks has priority, and that "the intake structure can be so designed as to allow stream flow to exist and in the rare low flow cycles the hydro plant would shut down". (Letter dated February 19, 1984).

26. Consulting engineer Lawrence Stookey, who appeared as a witness for the Applicant at the hearing in this matter, further addressed the question of winter freezeover in a post-hearing submission addressed to the Hearing Examiner:

> No process can increase the freezing rate unless it removes heat or allows heat to be removed faster from a stream than would be removed without said process. The fact that a portion of the stream will be led underground in the proposed project leads to the conclusion that for this portion of the stream, less heat will be removed in the same period of time, and the freezing rate will in fact be less. (Letter dated February 24, 1984).

This point was reiterated by John P. Arnott, a design engineer who has worked with the Applicant on plans for the proposed project for the last three years, in a post-hearing letter submitted to the Hearing Examiner at the request of the Applicant:

> Once the water enters the pipe it will not be as subjected to natural cooling conditions and therefore after passing thru the turbine will enter the stream with more of its original natural temperature than if it had flowed in the stream bed. Farther down the stream in the winter, this stream dimishes (sic) as it is absorbed into the gravel and disappears. There will be less freezing occurring between the inlet and turbine than downstream at the same flow rate as the water has gone through less natural cooling and is moving faster due to the slope. (Letter dated February 23, 1984).

27. The Objectors testified that they also are concerned with the potential environmental impacts of the proposed appropriation, including damage to the streambed, disturbance of a natural watershed, possible damage to fish habitat from dewatering, damming, or heat generation, and the creation of an eyesore through the work that would be necessary to install the pipeline, the length of time involved in construction, and the possibility that the pipeline could be exposed by flood conditions. (Testimony of Reed Marbut, Barbara Karmel, J.R. Reynolds, Randle White).

28. J.R. Reynolds, witness for the Objectors, testified that it would be almost impossible for the Applicant to lay the pipe underground because the area is extremely rocky, with numerous large boulders; that it took the telephone company a week to run

a half-inch telephone cable a quarter mile in to his house, which is located across the creek from, and just above, the Applicant's property.

Mr. Reynolds also testified that spring runoffs cause massive washouts of dirt and shifts in the stream, that the people on the property above him have had to put in fill to protect their residence, and that in one other instance a "D-8 dozer" had to be employed in the creek bottom to protect another property.

29. The Applicant testified that the proposed pipeline route is located above and away from the narrow creek bottom, and that the drainage is about 80 feet wide at the elevation at which the pipe would be laid.

30. Applicant's testimony and evidence shows that the proposed project has been reviewed by the Soil Conservation Service and the Montana Department of Fish, Wildlife, and Parks, (hereafter, MDFWP) and that the project site has been visited by these agencies. The Missoula County Conservation District has approved the Applicant's Application for a Natural Streambed and Land Preservation Act Permit ("310" permit) with the modification that the project must be built to meet SCS standards, and that the Applicant must follow the recommendations made by MDFWP that the intake structure should be designed to avoid fish entrapment, that the water should be returned to the stream in a manner eliminating erosion, that the pipeline should be kept as far away from the water's edge as possible, and that no more than 60% of the flow should be diverted from the stream during low flow periods.

A March 7, 1983 letter from Larry G. Peterman, Water Resources Supervisor MDFWP, states that the Applicant has worked closely with the Missoula Office of DFWP and has agreed to maintain a minimum instream flow between the point of diversion and point of return of the proposed project and to bypass 40% of the flow during the low flow period. The Applicant reiterated his willingness to abide by these restrictions in his testimony at the hearing in this matter.

31. The Objectors testified that they believe the project is not economically feasible due to "unrealistic" capitalization and Applicant's potential inability to pay for the project. (Testimony of Reed Marbut).

32. The Applicant testified that he already has been able to obtain much of the necessary material. At his request, post-hearing letters were submitted by an investment firm and by a certified public accountant, stating that the project is economically viable and within the Applicant's financial capabilities. March 13, 1984 letter from Jerry A Olson, C.P.A., March 12 letter from F. Dean Mahrt, Vice President of Piper, Jaffray & Hopwood.

Based upon the foregoing proposed Findings of Fact, the Hearing Examiner makes the following:

PROPOSED CONCLUSIONS OF LAW

1. The Department has jurisdiction over the subject matter herein, and all parties hereto, whether present at the hearing or not.

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2. The Department gave proper notice of the hearing, and all relevant substantive and procedural requirements of law or rule have been fulfilled, therefore the matter was properly before the Hearing Examiner.

3. The Department must issue a permit if the Applicant proves by substantial credible evidence:

> (a) there are unappropriated waters in the source of supply:
> (i) at times when the water can be put to the use proposed by the applicant,
> (ii) throughout the period during which the applicant seeks to appropriate,
> (iii) throughout the period during which the applicant seeks to appropriate the amount requested is available;
> (b) the water rights of a prior appropriator will not be adversely affected;
> (c) the proposed means of diversion, construction, and operation of the appropriation works are adequate;
> (d) the proposed use of water is a beneficial one;
> (e) the proposed use will not interfere unreasonably with other planned uses or developments for which a permit has been issued or for which water has been reserved.

4. The use proposed by the Applicant, the generation of power, is a beneficial use of water. M.C.A. 85-2-102(2).[1]

[1] The current statutory criteria require a review of the economic feasibility of a project only if the appropriation is for 10,000 or more acre-feet per year or 15 or more cubic feet per second. MCA § 85-2-311(2). Although evidence on an application for a smaller appropriation indicating that the proposed project is so blatantly infeasible that completion and operation of the project is unlikely tends to show that the water cannot be put to beneficial use, no such evidence is present in this matter. Applicant's testimony and post-hearing submissions indicate that he is financially capable of completing the project and has sufficient interest in the project to maintain and operate it once it is completed. (See Finding of Fact 32).

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5. The proposed use will not interfere unreasonably with other planned uses or developments for which a permit has been issued or for which water has been reserved.

6. There are unappropriated waters in the source of supply, at times when the water can be put to the use proposed by the applicant.

It is clear from the decreed and filed water use rights on Grant Creek that the Creek is overappropriated, at least on paper. It also is clear from the water records for Grant Creek that water is available for new consumptive uses only during spring run-offs and occasional high flows during the remainder of the year.

However, the proposed use in this matter is non-consumptive: the Applicant has provided evidence that the project will not cause water to be consumed through evaporation or because of damage to the streambed. It also appears that, since the pipeline will be laid above the level of the creek, and since any subsurface water which is "migrating" to the creek will only be diverted 2-3 feet downward by the barrier imposed by the pipe, such waters will still remain in the alluvial aquifer of the creek, and will not be lost to the much deeper groundwater aquifer. (See Findings of Fact 9, 13-17). Therefore, all of the water which is diverted by the proposed project, either by the physical presence of the pipeline or by the specific appropriation made through the diversion structure, will be returned to the creek and will be available for appropriation

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downstream. (No water use right holders on Grant Creek have a point of diversion located between the proposed point of diversion and the point of return).

An underlying policy of the Montana Water Use Act is the maximization of the use of state waters. See MCA § 85-2-101(3). A proposed appropriation such as the one involved in this matter is well in keeping with this stated purpose, for it allows double use of the same water; an upstream non-consumptive use which restores the creek to its original volume and thereby provides for the prior consumptive rights which lie downstream.

Since water is physically available at the Applicant's proposed point of diversion, and will be returned to the stream to be available for the downstream prior appropriators' diversions, there are waters in the source of supply which are "unappropriated" within the meaning contemplated by the Water Use Act. See MCA § 85-2-102(1) for the definition of "appropriate".

7. Water measurement data on the source of supply indicates that the full amount of the requested appropriation is not available during low flow periods, since the Applicant has agreed to bypass 40% of the flow. (See Finding of Fact 30). However, the Applicant can make beneficial use of whatever amount of water is available, up to the amount he has requested. (See Finding of Fact 14).

8. The proposed means of diversion, construction, and operation of the appropriation works are adequate.

The Applicant has provided sufficient information to indicate that the proposed means of diversion, construction, and operation of the appropriation works are adequate. He has introduced specific information concerning the turbine, turbine housing, length and diameter of the pipeline, project location, and the SCS parameters for the intake structure. In the instances where exact information was not provided (whether a pre-formed steel diversion structure or a concrete structure will be utilized, or the exact positioning of the intake structure, for example), the Applicant has indicated the alternatives and the bases upon which a final decision will be reached; the testimony and the evidence indicate that the Applicant's failure to have made final decisions on these matters springs from a good faith effort to base the choices on forthcoming SCS site-specific evaluations designed to minimize the project's impact on the creek.

9. The Objectors' concerns about the potential environmental impacts the proposed project might have on the creek have been noted. The Objectors allege that the potential impacts include damage to the streambed, disturbance of a natural watershed, possible damage to fish habitat, and creation of visual and ecological disturbance through the work necessary to install the project.

The evidence indicates that disturbance of the streambed in the area of the project will not result in the loss of water, since the creek is a gaining stream at this point, and since the creek bottom can be sealed if necessary to aid water retention. (See Finding of Fact 9). Applicant testified that the

construction disturbance would be kept to a minimum, and that the route for the pipeline is laid well away from the creek and is already free of heavy vegetation; the pipe will be located underground.

The Objectors emphasized their interest in an "undisturbed" and "natural" watershed. However, testimony of the Objectors' witness indicates that the Grant Creek watershed is not undisturbed and pristine; that heavy equipment has been used in and around the creek channel on previous occasions, and that landfills have been utilized as well. (See Finding of Fact 28).

The Objectors have expressed concerns about fish habitat. However, in light of case law on state ownership of wild animals and game, it would appear that the correct party to assert such interests is the state agency assigned to stewardship of fish and wildlife. See generally Herrin v. Sutherland, 74 Mont. 587, 241 P. 348 (1975); State ex rel. Visser v. Fish and Game Commission, 150 Mont. 525, 437 P.2d 373 (1968). In this instance, the Montana Department of Fish, Wildlife and Parks has made an on-site inspection and review of the proposed project, and has recommended approval; the specific recommendations made for mitigations of the project's impacts have been made a prerequisite for a necessary permit which is issued by an agency other than the Department.

10. The rights of a prior appropriator will not be affected. The use in this matter is non-consumptive, which means that no water will be lost to the downstream consumptive uses of the creek.

Although there is a potential problem with winter freeze-up in the creek, the evidence indicates that more likely than not, the project will not create additional problems with freezeup. The water which will be diverted through the pipeline will be in an underground pipe and will be moving rapidly. The water left in the creek will be running through a turbulent stretch of creek bottom. Additionally, the stream may be gaining warmer water through its bed during this stretch of creek. (See Findings of Fact 23-26).

Therefore, based upon the foregoing Findings of Fact and Conclusions of Law, and all records and files herein, the Hearing Examiner makes the following:

PROPOSED ORDER

Subject to the terms, restrictions, and limitations specified below, Application for Beneficial Water Use Permit No. 49230-s76M is hereby granted to Grant Hanson to appropriate 5 cubic feet per second up to 3,619 acre-feet annually for non-consumptive use for power generation between January 1 and December 31 of each year. The point of diversion of this appropriation is NE¼SE¼SW¼ of Section 10, Township 14 North, Range 19 West, and the place of use is the SE¼SE¼SW¼ of Section 10, Township 14 North, Range 19 West, all in Missoula County, Montana. The source of supply is surface water from Grant Creek, to be diverted by means of an SCS-approved inlet structure and to be returned to the creek in the area of the point of use specified above. The priority date for this Permit shall be December 13, 1982, at 2:40 p.m.

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This Permit is issued subject to the following express terms, conditions, restrictions, and limitations:

A. The water rights evidenced by this Permit are subject to all prior and existing rights, and to any final determination of such rights as provided by Montana law. Nothing herein shall be construed to authorize diversions by the Permittee to the detriment of any senior appropriator.

B. Nothing herein shall be construed to affect or reduce the Permittee's liability for damages which may be caused by the exercise of this Permit. Nor does the Department, in issuing this Permit, acknowledge any liability for damages caused by the exercise of this Permit, even if such damage is a necessary and unavoidable consequence of the same.

The Permittee shall not divert more water than is reasonably required for the purpose for which the Application has been made. In no instance may the Permittee appropriate more water than the amount specified in the Permit. At all times when the water is not reasonably required for the specified purpose, the Permittee shall allow the waters to remain in the source of supply.

D. The structures, necessary appurtenances, and all construction necessary to accomplish the installation and maintenance of the power generation facility shall be in accordance with Soil Conservation Service plans and specifications, or plans and specifications prepared by a qualified professsional engineer and approved by the SCS and any other necessary authorizing agency.

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E. The Permittee shall work with the Soil Conservation Service to develop an accurate method of measurement at or above the point of diversion and at or below the point of return flow to the creek, and shall keep a record of all flows diverted and all flows returned to the creek. The Permittee shall cooperate with other licensing agencies in determining methods and records of measurement which will ensure that the Permittee's compliance with by-pass flow or other requirements imposed by such agencies can be accurately determined.

F. If a written complaint is received by a prior appropriator alleging that diversions by the Permittee from Grant Creek are exacerbating winter freeze-up problems to the extent that prior water rights cannot reasonably be exercised, the Department may make a field investigation of the project. If the field investigation yields sufficient evidence to indicate that the prior appropriator would be able to exercise the water right in the absence of appropriation by the Permittee, the Department may conduct a hearing in the matter, allowing the Permittee opportunity to show cause why the Permit should not be modified or revoked.

DONE this ____ day of _____, 1984.

Peggy A. Elting, Hearing Examiner
Department of Natural Resources
and Conservation
32 S. Ewing, Helena, MT 59620
(406) 444 - 6612

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NOTICE

This proposal is a recommendation, not a final decision. All parties are urged to review carefully the terms of the proposed permit, including the legal land descriptions. Any party adversely affected by the Proposal for Decision may file exceptions thereto with the Hearing Examiner (32 S. Ewing, Helena, MT 59620); the exeptions must be filed within 20 days after the proposal is served upon the party. M.C.A. § 2-4-623.

Exceptions must specifically set forth the precise portions of the proposed decision to which exception is taken, the reason for the exception, and authorities upon which the exception relies. No final decision shall be made until after the expiration of the time period for filing exceptions, and the due consideration of any exceptions which have been timely filed. Any adversely affected party has the right to present briefs and oral arguments must be requested in writing within 20 days after service of the proposal upon the party. M.C.A. § 2/-4-621(1).

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AFFIDAVIT OF SERVICE
MAILING

STATE OF MONTANA)
) ss.
County of Lewis & Clark)

Donna K. Elser, an employee of the Montana Department of Natural Resources and Conservation, being duly sworn on oath, deposes and says that on December 4, 1984, she deposited in the United States mail, Certified mail, an order by the Department on the Application by Grant Hanson, Application No. 49230-s76M , for an Application for Beneficial Water Use Permit, addressed to each of the following persons or agencies:

1. Grant Hanson, N. 7655 Hwy 10 W., Missoula, MT 59801
2. Vernon R. White, c/o Randle V. White, 108 Pattee Creek Drive, Missoula, MT 59801
3. Richard H. Ostergren, P.O. Box 8012, Missoula, MT 59807
4. A. Reed Marbut, 8815 Pickering Lane, Missoula, MT 59802
5. GCR Trust, c/o Alexander George, 510 Glacier Building, Missoula, MT 59802
6. Grant Creek Ranch Trust, c/o Alexander George, 510 Glacier Building, Missoula, MT 59802
7. Barbara M. Karmel P.O. Box 1548, Lake Oswego, Oregon 97034
8. Mike McLane, Manager, Water Rights Bureau Field Office, Missoula, MT (inter-departmental mail)
9. Peggy A. Elting, Hearing Examiner (hand deliver)

DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

by Donna Elser

STATE OF MONTANA)
) ss.
County of Lewis & Clark)

On this 4th day of December, 1984, before me, a Notary Public in and for said state, personally appeared Donna Elser, known to me to be the Hearings Recorder of the Department that executed this instrument or the persons who executed the instrument on behalf of said Department, and acknowledged to me that such Department executed the same.

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IN WITNESS WHEREOF, I have hereunto set my hand and affixed my official seal, the day and year in this certificate first above written.

Judy Kohn

Notary Public for the State of Montana
Residing at Montana City, Montana
My Commission expires 3-1-85

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